

CLAIMS

1. A method for transporting real-time data over a packet-switched network and a circuit-switched network, comprising the steps of:

receiving an internet protocol (IP) packet from the packet-switched network at a designated point in the circuit-switched network;

generating a payload data packet;

aligning the payload data packet to a circuit-switched frame;

transporting the circuit-switched frame over-the-air to a wireless communication device;

extracting the payload data packet from the circuit-switched frame at the wireless communication device; and

generating a new IP packet from the payload data packet.

2. The method of Claim 1, wherein the step of generating the payload data packet comprises the steps of:

if the data in the internet protocol packet is intact, then compressing the internet protocol packet at the designated point to form a payload data packet; and

if the data in the internet protocol packet is corrupted, then generating a null frame as a payload data packet.

3. The method of Claim 2, wherein the step of compressing the IP packet comprises the step of stripping off header information.

4. The method of Claim 2, wherein if the null frame is the payload data packet, then the step of extracting the payload data packet comprises the step of interpolating a substitute for the null frame from at least one adjacent payload data packet.

5. The method of Claim 2, wherein if the null frame is the payload data packet, then the step of extracting the payload data packet comprises the step of using a last non-null frame as the payload data packet.
6. The method of Claim 3, wherein the step of generating the new IP packet from the payload data packet comprises the step of adding new header information to the payload data packet.
7. The method of Claim 6, wherein if the null frame is received, the step of generating the new IP packet from the payload data packet further comprises the steps of:
- 4 incrementing a radio transport protocol (RTP) sequence number if the null frame is received; and
 - 6 including the incremented RTP sequence number in the new header information.
8. The method of Claim 2, wherein a packet data serving node (PDSN) is the designated point, and the step of generating the payload packet is performed by the PDSN.
9. The method of Claim 2, wherein the step of generating the payload data packet is performed by a base station.
10. A method for transporting real-time data over a circuit-switched network and a packet-switched network, comprising the steps of:
- 4 receiving an internet protocol (IP) packet from an electronic device at a wireless communication device;
 - 6 generating a payload data packet from the IP packet at the wireless communication device;
 - 8 aligning the payload data packet to a circuit-switched frame;
 - transporting the circuit-switched frame over-the-air to a base station;

- 10 extracting the payload data packet from the circuit-switched
 frame; and
- 12 generating a new IP packet from the payload data packet.

11. The method of Claim 10, wherein the step of generating the new IP
2 packet from the payload data packet is performed by the base station.

12. The method of Claim 10, wherein the step of generating the new IP
2 packet from the payload data packet is performed by a packet data serving
node (PDSN).

13. A wireless communication device for transporting packetized voice
2 traffic and data traffic over a circuit-switched network and a packet-
switched network, comprising:

4 a processor; and

 a storage element coupled to the processor comprising an
6 instruction set executable by the processor, wherein the instruction set
comprise instructions for:

8 generating a payload data packet from an internet
protocol (IP) packet;

10 aligning the payload data packet to a circuit-switched
frame; and

12 transmitting the circuit-switched frame over-the-air to a
base station.

14. A base station for transporting packetized voice traffic and packetized
2 data traffic over a wireless communication network, comprising:

 a processor; and

4 a storage element coupled to the processor comprising an
instruction set executable by the processor, wherein the instruction set
6 comprise instructions for:

 receiving an internet protocol (IP) packet;

8 compressing the IP packet to form a payload data packet;
aligning the payload data packet to a voice frame; and
10 transmitting the aligned voice frame to a wireless
communication device.

15. The base station of Claim 14, wherein the instructions are further for
2 generating a null frame if the received IP packet is corrupt, wherein the null
frame will carry the same Radio Transport Protocol (RTP) sequence number
4 as the flawed IP packet and will be the payload data packet.

16. A packet data serving node (PDSN) for transporting of packetized
2 voice traffic and packetized data traffic over a wireless communication
network, comprising:

4 a processor; and

a storage element couple to the processor comprising an
6 instruction set executable by the processor, wherein the instruction set
comprise instructions for:

8 receiving an internet protocol (IP) packet;
compressing the IP packet to form a payload data packet;
10 aligning the payload data packet to a voice frame; and
transmitting the aligned voice frame to a base station.

17. The PDSN of Claim 16, wherein the instructions are further for
2 generating a null frame if the received IP packet is corrupted, wherein the null
frame will carry the same Radio Transport Protocol (RTP) sequence number
4 as the flawed IP packet and will be the payload data packet.

18. Apparatus for transporting real-time data over a packet-switched
2 network and a circuit-switched network, comprising:

means for receiving an internet protocol (IP) packet from the
4 packet-switched network at a designated point in the circuit-switched
network;

6 means for generating a payload data packet;
means for aligning the payload data packet to a circuit-switched
8 frame;
means for transporting the circuit-switched frame over-the-air to
10 a wireless communication device;
means for extracting the payload data packet from the circuit-
12 switched frame at the wireless communication device; and
generating a new IP packet from the payload data packet.

19. Apparatus for transporting real-time data over a circuit-switched
2 network and a packet-switched network, comprising:

means for receiving an internet protocol (IP) packet from an
4 electronic device at a wireless communication device;
means for generating a payload data packet from the IP packet at
6 the wireless communication device;
means for aligning the payload data packet to a circuit-switched
8 frame;
means for transporting the circuit-switched frame over-the-air to
10 a base station;
means for extracting the payload data packet from the circuit-
12 switched frame; and
means for generating a new IP packet from the payload data
14 packet.